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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,324	04/02/2001	Takahiro Hoshida	5000-4867	9409

7590 11/05/2003
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EXAMINER

LOPEZ, FRANK D

ART UNIT PAPER NUMBER

3745

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,324

Applicant(s)

HOSHIDA ET AL.

Examiner

F. Daniel Lopez

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4,6-15 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 and 21 is/are allowed.
- 6) ☒ Claim(s) 4,6,8-15,17-19 and 23 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

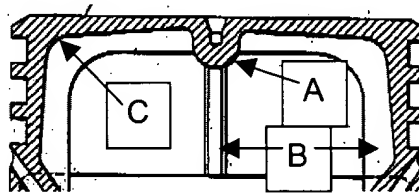
Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16-18.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

Applicant's arguments filed September 2, 2003, have been fully considered but they are not deemed to be persuasive.

Applicant argues that Weidely does not teach a protrusion on the inner end face of the end wall, with the protrusion including a plurality of ribs, stating that the end face 6. Applicant is mistaken. Fig 2 clearly shows the protrusion (A, below) and the ribs (B, below) on the end face. The end face is not edge 6, rather it is on the opposite end from the part marked 6. The claims include a limitation that the end face is exposed to pressure in the cylinder bore (e.g. claim 10 line 5). Edge 6 can not be this face, since it is only an edge and does not have a solid face, to be exposed to the pressure. The opposite end has a solid face and is the claimed end face.



Applicant argues that Weidely does not teach a convex surface radially inside and joined to an annular concave surface. The end face opposite the edge 6 has a centrally located convex protrusion (A, above) facing toward the edge 6, and an annular concave surface (C, above) which is joined to the convex surface by a flat surface.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC 102

Claims 4, 6, 8, 10-18, 22 and 23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Weidely.

Claim Rejections - 35 USC § 103

Claims 9 and 19 are rejected under 35 U.S.C. § 103 as being unpatentable over Weidely in view of Gruetjen. Weidely discloses a hollow piston comprising an end wall having a flat outer end face exposed to pressure of a cylinder bore and an inner end face; wherein a recess is formed in the outer end face; wherein the inner end face includes a protrusion, including ribs, and a convex surface located radially inside and joined to an annular concave surface; wherein the convex surface is a smooth curved surface and has a uniform cross section over its entire circumference about an axis of the piston; and wherein the contour of the inner end face first approaches and then departs from the outer end face, from a radially outer portion to a radially inner portion; wherein the end wall is part of a head piece coupled to a body piece, which includes the remainder of the piston; but does not disclose that the head and body pieces are separable, and when separated, the inner end face is exposed.

Gruetjen teaches, for a piston comprising a head piece (1) coupled to a body piece (6), wherein the head piece includes an end wall having an outer end face exposed to pressure of a cylinder bore and an inner end face, and the body piece includes the remainder of the piston; that the head piece is formed separate from the body piece, and when separated, the inner end face is exposed, for the purpose of decreasing fabrication costs (column 1 line 20-21). One of ordinary skill in the piston art would recognize that the decreased cost is due to being able to form the complex shape on the inner end face, without interference by the body piece.

Since the inner end face of Weidely is relatively complex, and Gruetjen teaches forming a head piece before attaching it to a body piece, for the purpose of decreasing costs, due to being able to form the complex inner end face, without interference by the body piece, the purpose disclosed by Gruetjen would have been recognized in the pertinent art of Weidely. It would have been obvious at the time the invention was made to one having ordinary skill in the art to form the head piece of Weidely separate from the body piece, and when separated, the inner end face is exposed, as taught by Gruetjen, for the purpose of decreasing fabrication costs.

Conclusion

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 20 and 21 are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is (703) 308-0008. The examiner can normally be reached on Monday-Thursday from 6:30 AM -4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on (703) 308-1044. The fax number for this group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0861.



F. Daniel Lopez
Primary Examiner
Art Unit 3745
November 05, 2003